B.E. (Computer Science Engineering) Sixth Semester (C.B.S.)

Computer Networks

P. Pages : 2 **NIR/KW/18/3493**

Time : Three Hours * 1 2 6 3 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Discuss similarities and differences in TCP/IP and OSI model. Also explain OSI model. **9**

b) Explain different physical topologies that are used in the Network. **4**

OR

2. a) Explain different directions of data flow in network. Illustrate your answer with real time example. **7**

b) Identify the TCP/IP model layer that perform following action : **4**
i) Processes requests from hosts to make sure a connection is made to the appropriate port.
ii) Defines protocols used for addressing.
iii) Defines the types of connection established between hosts.
iv) Defines how hosts connects to network.

c) Define (a) Physical address (b) Port address (c) Logical address. **2**

3. a) Explain error detection and error correction. Also explain one error detection and one error correction method with example. **9**

b) Explain stop and wait ARQ protocol. Write procedure for it. **4**

OR

4. a) What is HDLC? Explain the different frames in HDLC protocol. **6**

b) Explain the concept of Go-Back-N-ARQ. **4**

c) Explain character stuffing with example. **3**

5. a) Explain point – to – point protocol along with its frame format. Also explain the different protocols in PPP. **9**

b) Differentiate between pure ALOHA and slotted ALOHA. **5**

OR

6. a) Explain difference between FDMA, TDMA, CDMA. **8**

b) Write short notes on : **6**
i) Traditional Ethernet
ii) Fast Ethernet

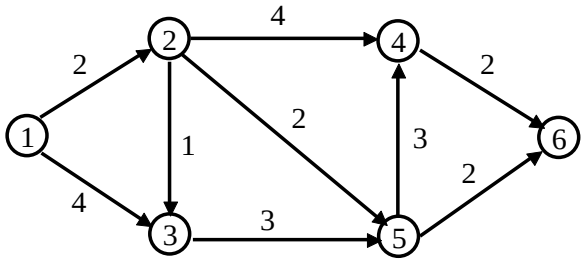
7. a) What routing technique is applied in flooding? How flooding affect network performance? **7**

b) Explain in detail Link State Routing. **6**

OR

8. a) What do you mean by routing? Differentiate between static and dynamic routing. **6**

b) Explain Dijikstra's shortest path algorithm. Explain with the help of following graph. **7**



9. a) Explain Address Resolution Protocol along with its header format? **7**

b) Write short notes on : **6**
i) Leaky Bucket algorithm
ii) Token Bucket algorithm

OR

10. a) List and explain $ICMP_V4$ messages along with its respective codes. **7**

b) What do you mean by congestion? Explain the different congestion control strategies. **6**

11. a) What do you mean by Quality of Services? Discuss techniques to improve QoS. **7**

b) Explain UDP header format. Also explain the services provided by transport layer. **7**

OR

12. Write short notes on **any four.** **14**

i) Bluetooth

ii) Wireless LAN : IEEE 802.11

iii) Sonet

iv) Cellular Telephony & Satellite network.

v) ISDN

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